3. Denis

Program Name: Denis.java **Input File: denis.dat**

Denis is helping his little sister with her math homework which covers reducing fractions. However, she usually needs help when Denis is at UIL Computer Science practice. Denis decides to write a program that she can use while he's away that will check whether she has correctly reduced a given fraction or not.

Denis needs your help writing a program, that given a fraction, will reduce it. To reduce a fraction, all you have to do is find the greatest common divisor (GCD) of both the numerator (the number above the line in a fraction) and the denominator (the number below the line in a fraction), then divide both the numerator and denominator by the GCD.

Input: Input begins with an integer C ($1 <= C <= 20$), the number of different test cases. Each of the following C lines will contain a fraction in the form of N/D, where N is the numerator and D is the denominator. N will be guaranteed to be an integer in range $[-500,500]$, D will be guaranteed to be in range $[-500,0) \cup (0,500]$, and there is no restriction that N be less than, equal to, or greater than D. N/D may be given in reduced form initially, so no reduction may be needed.

Exact Output: For each fraction, you are to output: N/D reduced is X/Y, where X is the reduced numerator and Y is the reduced denominator. Negative fractions should be manipulated so that the minus sign goes with the numerator. Zero is represented by zero (0) as the numerator and one (1) as the denominator.

Sample Input:

```
10
2/4
1/2
3/4
18/24
0/5
6/8
-4/-8
4/-8
-4/8
8/4
```

Sample Output:

```
2/4 reduced is 1/2
1/2 reduced is 1/2
3/4 reduced is 3/4
18/24 reduced is 3/4
0/5 reduced is 0/1
6/8 reduced is 3/4
-4/-8 reduced is 1/2
4/-8 reduced is -1/2
-4/8 reduced is -1/2
8/4 reduced is 2/1
```